



# California Regional Water Quality Control Board

## Santa Ana Region



Terry Tamminen  
Secretary for  
Environmental  
Protection

3737 Main Street, Suite 500, Riverside, California 92501-3348  
(909) 782-4130 • Fax (909) 781-6288  
<http://www.swrcb.ca.gov/rwqcb8>

Arnold Schwarzenegger  
Governor

March 5, 2004

Mr. Peter Nyquist  
Weston, Benshoof, Rochefort, Rubalcava & MacCuish, LLP  
333 South Hope Street, 16<sup>th</sup> Floor  
Los Angeles, CA 90071

### REVIEW OF PERCHLORATE INVESTIGATION REPORT, ASTRO PYROTECHNICS, 2298 WEST STONEHURST DRIVE, RIALTO, SAN BERNARDINO COUNTY

Dear Mr. Nyquist:

We have reviewed the December 15, 2003 submittal entitled "Perchlorate Investigation Report" for Astro Pyrotechnics, 2298 West Stonehurst Drive, Rialto, California. This investigation report was prepared by your consultant, Kleinfelder, and submitted in response to the requirements of the Investigation Order letter that I sent to you on November 6, 2002.

The Astro Pyrotechnics facility occupies approximately five acres of leased land located on the northeast corner of Stonehurst Drive and the extension of Alder Avenue. The site consists of 25 buildings and storage units. The facility manufactures theatrical (1.4G) fireworks and pyrotechnic articles for shipment to off-site, licensed professional customers. The facility receives raw materials (including chemicals and paper goods) and assembles various types of fireworks inside small work buildings.

According to Kleinfelder, perchlorate and other chemicals are delivered in bulk containers on pallets at the shipping and receiving area located near the northwest corner of the facility office (Building 25). The pallets are then moved to the chemical storage areas, Unit Nos. 12 and 13a through 13e. The individual bulk chemical containers are then removed from the storage units to the weighing room located in the south half of Building 10. In the weighing room, the powder formulations are weighed into their component parts and sealed in 5-gallon plastic buckets for transport to the mixing rooms. The chemical powders are then mixed in the designated mixing rooms (Building Nos. 1, 8, 10 and 15). In the past, Building Nos. 14 and 17 were used as mixing rooms.

Prior to this investigation, four of the work buildings (Building Nos. 1, 8, 10 and 15) had concrete liquid collector pads that were situated adjacent to the buildings. The pads were used for collecting wastes that were generated during the fireworks manufacturing process and from washing down the buildings with water after the operations to remove chemical dusts. The water was allowed to evaporate in the collection pads as a means of waste minimization prior to removal of the liquids and sludge and placement in Department of Transportation certified 55-gallon plastic drums. The wash down procedure was modified at my direction in a letter dated March 3, 2003. According to Kleinfelder, "wash down" is now accomplished with wet wipes that

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are subsequently disposed of in 55-gallon plastic drums. The liquid collection pads were removed during the current soil investigation, prior to trench excavation.

The purpose of this investigation was to determine whether the storage and usage of perchlorate for manufacturing of theatrical (1.4G) fireworks and pyrotechnic articles at the Astro Pyrotechnics facility might have caused the release of perchlorate to the ground surface adjacent to the storage and work buildings. A total of five exploratory trenches were excavated adjacent to the bulk storage area and mixing rooms. Trench AP-T1 was excavated to the west of storage Units Nos. 6, 12 and 13a through 13e. Trenches AP-T2, AP-T3, AP-T4 and AP-T5 were excavated beneath the liquid collection pads associated with the mixing rooms in Building Nos. 10, 8, 2 and 15, respectively. The trenches were excavated to a total depth of ten feet below ground surface (bgs). Soil samples were collected at one, five and ten feet bgs. Soils in the trenches primarily consisted of gravelly to cobbly sand, to silty and sandy gravel.

Soil samples were analyzed for volatile organic compounds (VOCs), using USEPA Method 8260B, perchlorate, using USEPA Method 314.0, and specific conductance, using Method S-1.60 W.S. Perchlorate was detected in 12 samples at the site at concentrations ranging from 1.2 milligrams per kilogram (mg/kg) to 32 mg/kg. The highest perchlorate concentration of 32 mg/kg was detected in the soil sample collected from Trench AP-T2 at a depth of ten feet bgs. No perchlorate was detected in soil samples collected from Trench AP-T1. The only VOC detected at the site was naphthalene, at a concentration of 1.1 micrograms per kilogram, in one soil sample collected from Trench AP-T1 at five feet bgs.

In addition to coordination of the field activities at the site, Kleinfelder reviewed historical records consisting of aerial photographs, building permits, property ownership records and other documents. This review focused on information related to past and current site activities, areas of waste disposal or other potential sources or releases of perchlorate, and correlation of these factual records with the existing and historical site features through use of the aerial photographs. In addition, facility operations, process flow, chemical use and waste streams at the Astro Pyrotechnics facility were reviewed to develop additional understanding of process activities that could have resulted in one or more releases of chemicals, including perchlorate.

This investigation found that perchlorate is present in the subsurface soil at Astro Pyrotechnics, beneath four of the five former liquid collection pads, to depths of at least ten feet bgs. However, the extent of perchlorate-impacted soil at the site has not been fully assessed. Based on the findings of this investigation, the historical use of the liquid collection pads since 1988, and the potential additional chemical usage and disposal as far back as 1973, additional investigation of soil and groundwater, and soil cleanup, is necessary at the Astro Pyrotechnics facility.

Additional investigations at the 5-acre site have been proposed by consultants for a former facility operator (Whittaker Corporation) and the owner of the property (Mr. Thomas Peters). In an effort to avoid duplication of field work, and to enable mutual cooperation among all responsible parties, the Board may order Whittaker Corporation, Pyro Spectaculars, Inc., and Mr. Thomas Peters to prepare a joint work plan for installation of deep soil borings and groundwater monitoring wells throughout the site. At the conclusion of the field work activities, responsible parties may also be requested to perform additional field work, or to financially contribute toward the implementation of groundwater investigation or remediation activities. We

Mr. Peter Nyquist

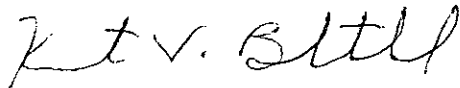
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will discuss these matters further at the upcoming meeting we have scheduled with you and your clients, and the representatives of Whittaker Corporation and Mr. Peters, at our office on March 16, 2004.

If you have any questions, please contact me at (909) 782-3284, or Ann Sturdivant, Chief of our Spills, Leaks, Investigations and Cleanups Section, at (909) 782-4904.

Sincerely,



for Gerard J. Thibeault  
Executive Officer

cc: Jorge Leon, SWRCB, Office of Chief Counsel  
Richard Orr, Kleinfelder  
Eric Lardiere, Whittaker Corp./Meggitt-USA, Inc.  
Thomas O. Peters  
Inland Empire Perchlorate Regulatory Task Force (mailing list attached)

KS: Rialto perchlorate/13267/astrocommentltr

*California Environmental Protection Agency*

The Honorable Senator Nell Soto  
State Capital, Room 4078 P.O. Box 942848  
Sacramento, CA 94248-0001

Anthony Araiza, Jerry Eagans & Leon Long  
West Valley Water District  
P.O. Box 920  
Rialto, CA 92377-0920

Barry Groveman & Steven Elie  
Musick, Peeler & Garrett  
624 S. Grand Ave., Suite 2000  
Los Angeles, CA 90017-3383

Christine Brown, Karen Baker Wendy Arano, & Aaron Yue  
California Dept. of Toxic Substances Control  
Geology & Corrective Action Branch  
5796 Corporate Ave.  
Cypress, CA 90630

Eric Fraser  
City of Colton  
Public Utilities Department  
650 N. La Cadena Drive  
Colton, CA 92324-2897

Francis D. Logan, Jr. & Susan M. Trager  
Law Offices of Susan M. Trager  
19712 MacArthur Blvd., Ste. 120  
Irvine, CA 92612

Gary Tavetian, Kate Kennedy  
California Office of the Attorney General  
300 S. Spring St., Ste. 500 N.  
Los Angeles, CA 90013-1204

Gene Tanaka, Danielle Sakai  
Best, Best & Kreiger  
3750 University Ave., Mission Square  
Riverside, CA 92501

Glen Yabuno & Ken Ayers  
County of San Bernardino  
Specialized Prosecutions Unit  
412 W. Hospitality Lane, Ste. 301  
San Bernardino, CA 92415-0023

Mike Bledsoe, Michael Wochnick  
California Integrated Waste Management Board  
P.O. Box 4025  
Sacramento, CA 95812-4025

Mike Whitehead/Mike McGraw/ Jim Bryson/Gerald J. Black  
Fontana Water Company  
P.O. Box 987  
Fontana, CA 92335

Peter Fox & Robert Owen  
City of Rialto  
Public Works Department  
150 S. Palm Avenue  
Rialto, CA 92376

Robert Thompson  
Thirty-second Senatorial District  
Office of Senator Nell Soto  
822 N. Euclid Ave., Suite A  
Ontario, CA 91762

Sarah Mueller, Wayne Praskins & Matt Mitguard  
U.S. EPA - Region 9  
75 Hawthorne Street  
San Francisco, CA 94105

**Tim Ryan & Robert Young**  
**San Gabriel Valley Water Company**  
**Fontana Water Company**  
**11142 E. Garvey Ave.**  
**El Monte, CA 91732**

**Tom Soto**  
**PS Enterprises**  
**3350 Ocean Park Blvd., Ste. 205**  
**Santa Monica, CA 92405**